

## **Optimising stroke volume and oxygen delivery in abdominal aortic surgery: a randomised controlled trial**

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**Background:** Post-operative complications after open elective abdominal aortic surgery are common, and individualised goal-directed therapy may improve outcome in high-risk surgery. We hypothesised that individualised goal-directed therapy, targeting stroke volume and oxygen delivery, can reduce complications and minimise length of stay in intensive care unit and hospital following open elective abdominal aortic surgery.

**Methods:** Seventy patients scheduled for open elective abdominal aortic surgery were randomised to individualised goal-directed therapy or conventional therapy. In the intervention group, stroke volume was optimised by 250 ml colloid boluses intraoperatively and for the first 6 h post-operatively. The optimisation aimed at an oxygen delivery of 600 ml/min/m<sup>2</sup> in the post-operative period. Haemodynamic data were collected at pre-defined time points, including baseline, intraoperatively and post-operatively. Patients were followed up for 30 days.

**Results:** Stroke volume index and oxygen delivery index were both higher in the post-operative period in the intervention group. In this group, 27 of 32 achieved the post-operative oxygen delivery index target vs. 18 of 32 in the control group ( $P = 0.01$ ). However, the number of complications per patient or length of stay in the intensive care unit or hospital did not differ between the groups.

**Conclusion:** Perioperative individualised goal-directed therapy targeting stroke volume and oxygen delivery did not affect post-operative complications, intensive care unit or hospital length of stay in open elective abdominal aortic surgery.